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ABSTRACT

Pictures of black and white stimulus persons were shown to 96 white college students with different exposure frequencies (0,1,5, or 10) for different pictures. Subjects saw the stimulus persons either in positive settings, neutral settings, or negative settings. Analysis of variance of changes in trait ratings of the stimulus persons revealed significant effects due to content of the photographs, their frequency of exposure, and the content by exposure interaction. Contrary to Blume's (1966a, b) results for black models, positive exposure significantly enhances evaluations, and negative exposure decreased evaluations. White models showed primarily the positive effect. Overall, increasing exposure enhanced attitudes. This effect was very strong for positive stimuli, weak for neutral stimuli and slightly reversed for negative stimuli. Exposure effects (Zajonc, 1968) and associative learning processes appear to operate in oppcsing directions for negative stimuli. (Author)

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THE EFFECTS OF PICTURE CONTENT AND EXPOSURE FREQUENCY ON EVALUATIONS OF NEGROES AND WHITES[1]

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Since the 1950's, the Urban League, the NAACP and other civil rights organizations have sought more use of black actors in commercial advertisements as well as in television and movie roles (Bernstein, 1966; Carlson, 1966). These efforts appear to have been quite successful. For instance, the number of ads showing Negroes per 1,000 pages in ten major national magazines has tripled between 1956 and 1969 (Kassarjian, 1970). The manner of presentation of blacks has also changed markedly over the years (Cox, 1969). In 1946, 78 percent of American Negroes in magazine ads analyzed by Kassarjian (1969, 1970) were shown in laborer or service jobs such as maids, waiters or porters. By 1969 this number had dropped to four percent. Similarly, the percentage of magazine ads in which blacks and whites were shown as peers increased from six percent in 1946 to 44 percent in 1969.

The efforts to increase the media exposure of blacks were largely based on the twin assumptions that their greater media exposure, and particularly their presentation in positive roles, would change the public's racial attitudes in a favorable direction. Unfortunately, only a few studies have investigated the effects of different kinds of media exposure (Peterson & Thurstone, 1933; Klein, 1963; Stafford, Birdwell & van Tassel, 1970; Barban & Cundiff, 1964; Barban, 1970).

The first assumption, that increased media exposure of blacks per se will lead to more favorable public racial attitudes, is consistent with Zajonc's

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(1968) laboratory findings on the positive attitudinal effects of mere exposure. The second assumption, that favorable exposure will lead to favorable attitude change but negative exposure will not, has had less experimental attention; but it was investigated in a dissertation done at Claremont Graduate School by Blume (1966 a, b).

Blume's study found, as predicted, that seeing negative pictures of blacks in uncomplimentary or stereotyped activities led to unfavorable attitude change, in comparison to a control group which saw "neutral" pictures containing no Negroes. However, contrary to expectation, seeing positive pictures of blacks in high-status or non-stereotyped roles did not lead to a positive shift in evaluations in comparison to the control group. This result may have been due to the control pictures not really being neutral in content, or it may be due to the fact that Blume's pre-test post-test design used only a single exposure of each picture (since Johnson, Thomson and Frincke, 1960, found that the favorableness of nonsense syllables increased with two, five or ten exposures, but decreased after only one exposure).

The present study was designed to combine the research methods of Blume and Zajonc in order to obtain simultaneous information about the effects of exposure frequency and of content. One specific objective was to retest with more careful procedures Blume's findings concerning the effects on attitudes of showing blacks in positive, neutral and negative settings (the content effect). The study also extended Zajonc's findings on the effects of exposure (obtained using neutral stimuli) to the previously-uninvestigated areas of positive and negative stimuli. (This issue has also been independently investigated by Brickman and Redfield, 1970, and Burgess and Sales, 1970.)

This experiment was designed to study several different theoretical explanations of why mere exposure enhances the viewer's evaluation of stimulus objects. Also, since the stimuli included a systematic presentation of pictures of blacks, the results should have practical relevance for media exposure of minority-group members and perhaps also for situations involving personal contact with individuals from minority groups.

METHOD

Subjects

The subjects for this study were 96 students, 48 males and 48 females, attending Occidental College. The cooperation of a random sample of native, white undergraduates who were not upper division psychology majors was solicited via campus mail. Since the percentage of students willing to participate was high, the sample can be considered fairly representative of Occidental's students. These students can be characterized as typically coming from upper middle class backgrounds; the average subject reported that his father was a college graduate earning over $20,000 annually.

Procedures

The present study involved pre- and post-testing in a 3 x 2 x 4 x 2 factorial design. The major variables were: (a) the favorability of the photographs' content (positive, neutral, or negative pictures of single individuals), (b) the race of the stimulus person, or model (black or white), and (c) the number of times the pictures were exposed (zero, one, five, or ten). The sex of the subjects was the fourth factor.

Before coming to their experimental appointments, all subjects completed a background questionnaire. Upon their arrival, they were told that the

experimenters were studying "whether photographs can be used in forming impressions of people, how these impressions change over time, and whether it is easier for caucasians to form impressions of people of their own race than it is for them to form impressions of blacks." Each subject worked independently, and their first task was to make 12 trait ratings for each of 11 stimulus persons, who were shown in neutral, yearbook-type photographs. (Two illustrative neutral photographs are shown in Figure 1.) The group of stimulus persons included the four white models shown later during the experimental treatment, four black models shown later during the experimental treatment, two whites shown during the experimental treatment for "filler" purposes, and one white used first to acquaint subjects with the trait rating task. The subjects had three seconds to observe each photograph, following which they made their ratings on a scale of 1 (very characteristic) to 7 (very uncharacteristic). Stimulus persons were rated on 12 traits, which can be classified into five categories: general evaluative traits (likeable, successful, good, ugly), positive racial stereotypes (musical, religious), negative racial stereotypes (physically-dirty, lazy), positive non-stereotypes (practical, forgiving), and negative non-stereotypes (narrow-minded, fault-finding).

The experimental treatment consisted of showing each subject eight different stimulus persons for a total of 59 presentations. This was explained by saying, "We want to learn if seeing the photographs over again will help viewers form a more accurate impression of the person protrayed." Each of the 59 pictures was then shown for two to three seconds in a quasi-random order (i.e. the decks of pictures were shuffled between subjects). The eight different stimulus persons included were: three white models shown either one, five or

ten times, three black models shown either one, five or ten times, and two filler pictures of whites shown two and 25 times respectively. One white model and one black model were not shown during the experimental treatment; these were the models in the zero frequency of exposure condition. Specific models and frequencies of exposure were counterbalanced so that any given model was shown to one quarter of the subjects zero times, to another quarter of the subjects one time, to a third quarter of the subjects five times, and to the remaining subjects ten times.

Previously, numerous models had been photographed, with each model posing in three contexts: positive settings, neutral settings, and negative settings. The neutral pictures were yearbook-type, plain-background photographs of a man dressed in a sport shirt or other typical clothes. The positive pictures showed the same man in a socially-valued situation or activity and appropriately dressed (for instance, in a graduation gown, or wearing a clerical collar and standing in a pulpit, or using a high-powered microscope in a laboratory). The negative pictures showed him in a socially-devalued situation or activity and wearing scruffy clothes (for instance, in a police line-up wearing dungarees and an identification number, or as a janitor pushing a vacuum cleaner). See Figure 1 for sample pictures of black and white models.

Insert Figure 1 about here

The pictures of each model had been rated on a scale ranging from +6 (extremely positive) to -6 (extremely negative) by 20 students in an introductory psychology class. Only pictures judged as appropriate for their category were used; the mean ratings for the positive, neutral, and negative pictures

respectively were +2.76, -0.14 and -2.97. One way analyses of variance were performed separately for the pictures of each model. Since all eight F-tests were highly significant ($p < .005$), the manipulation of the photographs' content was successful. The two filler pictures of whites used in the experimental treatment were neutral in content for all subjects. The content of the remaining six pictures (three white models and three black models) differed for different groups of subjects: one third of the subjects saw all six models in positive contexts, one third saw them in neutral contexts, and one third saw them in negative contexts.

After the experimental treatment, the subjects re-evaluated the same 11 neutral pictures of stimulus persons that they had rated previously using the same 12 traits as before. (Among these were the six models they had seen in the experimental treatment and the two other models in the zero frequency of exposure condition.) In the positive and negative content conditions, the pictures exposed in the experimental treatment naturally had to be different than the neutral pictures which were rated in the pre-test and post-test. Therefore, different shots of the same model were used, and this same procedure was followed in the neutral content condition for six of the eight models to make it comparable to the positive and negative content conditions.

RESULTS

Before turning to the effects of the experimental treatment per se, two aspects of the pre-test ratings are worth mentioning. First, women tended to rate the models, especially the black models, more favorably than did men. This difference was significant nine out of 24 times it was tested. Second, on five traits (musical, physically-dirty, lazy, successful, and ugly) the subjects rated the black models more favorably than the white models. This may

represent an anti-prejudice orientation, or possibly a recent drop in the attitudes of white students at prestige-type colleges toward white Americans (Karlins, Coffman & Walters, 1969). On one trait, forgiving, blacks were rated less favorably than whites (possibly an interesting comment on the effects of black militancy).

The remaining presentation of results focuses on the changes between the pre-test and post-test trait ratings. All change scores are presented in such a way that positive scores indicate a more favorable evaluation of the stimulus persons after the experimental manipulation, while negative scores indicate a less favorable evaluation.

Analyses of the data were performed separately for each of the 12 traits, and particular attention was given to the results for the trait "likeable," which was the trait used in a similar study (Experiment III) by Zajonc (1968). However, the findings are presented mainly in terms of results for two composite measures, which have greater stability than any single trait. The overall composite measure combines the results for all 12 traits, and the evaluative composite measure combines three traits (successful, good and ugly) having heavy loadings on the semantic differential evaluative dimension.

For convenience in computer analysis, the data were treated by using two different three-way analysis of variance paradigms. The first type of analysis was performed on all the data, using photo content, race of the model, and frequency of exposure as the factors. The second type of analysis involved treating the data for black and white models separately. Photo content, sex of the subjects, and exposure frequency were used as the three factors. Results of the latter type of analysis showed that the sex of the subject had

no important effects on the change scores (of the 72 tests involving the sex of the subjects, there were three main effects and three two-way interactions significant at the .05 level, but these significant findings displayed no consistent pattern). Therefore, the former type of analysis is used in the presentation of results.

Effects of the Experimental Treatment

The results showed three major aspects of the effects of the experimental treatment: (a) the effect of picture content, (b) the effect of frequency of exposure, and (c) their interaction.

The most striking finding regarding the experimental treatment was the effect due to the favorability of the picture content. The F for the overall composite measure was 17.76, which is highly significant ($p < .001$, $df = 2/90$). Analysing the data for both races together, this effect was significant for 11 out of 12 traits, and the twelfth (ugly) showed a similar trend.

In comparison with the neutral pictures, the positive pictures, as predicted, produced a significant favorable shift in evaluations ($p < .01$ by a Newman-Keuls test). Also as predicted, the negative condition produced a rather large negative shift in trait ratings, but its difference from the neutral condition did not reach significance. The neutral pictures produced very little shift (a mean of -0.37, compared with 2.77 for the positive pictures and -1.72 for the negative pictures).

The relative impact of the positive and negative pictures differed somewhat for black models and white models. For black models, the effect of positive exposure was slightly greater than the effect of negative exposure. The means for positive, neutral, and negative conditions were 2.65, -0.17,

and -2.53 respectively. When the means for the positive and negative conditions were compared with the mean for the neutral condition by a Newman-Keuls test, both differences were highly significant ($p < .01$). This finding contradicts Blume's failure to find an effect due to the positive portrayal of black models. For white models, however, the effect of positive exposure was very much greater than the effect of negative exposure. The means for the positive, neutral, and negative conditions were 2.90, -0.57, and -0.91 respectively. The positive condition differed significantly ($p < .01$) from the neutral condition, but the negative condition did not. Thus, in comparison with white models, the black models showed smaller effects of positive exposure and larger effects of negative exposure. This finding is an interesting reflection of the stimulus value of Negroes in our white society.

The second major aspect of the treatment results concerned the effect of frequency of exposure on attitudes. For the overall composite measure, the main effect due to frequency of exposure was significant ($F = 3.89$, $df = 3/279$, $p < .01$). Ten exposures led to significantly more favorable evaluations ($p < .05$) than did zero exposures, but the Newman-Keuls test showed no significant differences between any of the other means. Results for the 12 traits analyzed individually showed a signficant exposure effect for only four traits (narrow-minded, fault-finding, lazy and good). On each of these traits higher exposure frequencies were generally associated with more favorable trait ratings. However, the fact that only four traits showed significance indicates that the exposure effect was considerably weaker than the content effect.

The third major aspect of the treatment results, the interaction of exposure and content effects, has special theoretical interest. This interaction

was significant for both the overall composite measure (F = 3.68, df = 6/279, $p < .01$) and for the three-trait evaluative composite measure (F = 5.54, df = 6/279, $p < .001$). On the individual traits, this interaction effect was significant for four of the 12 (dirty, successful, good and ugly).

Figure 2 graphically displays the interaction of content and exposure effects on the overall composite measure. It shows that when stimulus individuals

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Insert Figure 2 about here

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were portrayed in a positive context, more frequent exposure was associated with markedly more favorable ratings. However, exposure frequency had only a slight positive effect on evaluations of models shown in neutral contexts. In contrast, when models were shown in a negative context, more frequent exposure was associated with slightly more negative ratings.

Rather surprisingly, no significant effects due to the race of the model emerged on the overall composite measure nor on any of the individual traits. Finally, no additional interaction effects were significant on the overall composite measure nor on the evaluative composite measure.

DISCUSSION

The introduction to Zajonc's (1970, p. 3) article in Psychology Today, states "after repeated exposure, almost anything grows on you--even Spiro Agnew." Similarly, in his monograph, Zajonc (1968, pp. 19-20) makes it clear that the mere-exposure position predicts attitude enhancement even for initially-negative stimuli. As examples he cites stimuli which evoke instinctive fear reactions in animals and a college student who regularly attended class enveloped in a big

black bag, eliciting reactions from his classmates which gradually changed from hostility to friendship.

Proponents of a learning viewpoint would make a different prediction. They would argue that the negative connotations of a picture should become associated with the model portrayed. With repeated exposure, the associative bonds should gradually become stronger, resulting in increasingly negative evaluations. From this theoretical viewpoint, when models are shown in positive contexts, evaluations should become more positive with increased exposure. Furthermore, with more frequent exposure, the decrease in evaluations due to negative contexts should be a mirror-image of the increase due to positive contexts. Burgess and Sales (1970) have offered this type of interpretation for their experimental findings.

Results of the present experiment clearly show that attitudinal enhancement due to exposure is not a sufficient explanation of the results for exposure to negative stimuli. Repeated exposure of negative photographs did not increase evaluations of the models. However, the negative effect of repeated exposure to negative photographs was not a mirror-image of the positive effect. The negative effect was neither as marked nor as consistent as the favorable effects of positive photographs. Failure to obtain mirror-image effects is not an artifact of having more successfully selected positive pictures: if anything, the negative pictures ($\bar{X} = -2.97$) were independently rated as more extreme than positive pictures ($\bar{X} = +2.76$). These data can best be interpreted as reflecting the simultaneous, but opposing, effects of the mere-exposure phenomenon and of associative learning with the negative force due to associate learning being greater than the positive force due to repeated exposure.

In addition to exposure and learning, there are other theoretical views which might help to explain our results and Zajonc's mere-exposure phenomenon. For instance, a perceptual projection theory would posit that most people have positive views of human nature, and that increasing the number of exposures of neutral portrait photographs would provide more opportunity for the subjects to project their positive feelings onto the models portrayed. The amount of projection might also be affected by the content of the pictures, but the key test of this theoretical view would be to measure individual differences in attitudes toward human nature and see if they correlated with the amount of change in evaluation of the models portrayed in neutral settings. A similar approach, correlating individual differences in amount of anxiety with degree of change in evaluation of the models, could be used to test an anxiety-reduction theory. Such a theory is consistent with Zajonc's (1968) view that fear, uncertainty and response competition are an organism's initial reactions to a novel stimulus. Repeated exposure reduces these initial reactions. Since individual difference data are required to test both of these theoretical viewpoints, further research will be necessary before they can be supported or rejected.

In conclusion the present experiment provides only limited support for Zajonc's (1968) views concerning the generality of the exposure effect. The overall effect of frequency was significant. However, this finding resulted primarily from the strong exposure effect for positive stimuli, whereas exposure of neutral photographs should provide the most crucial test of the replicability of Zajonc's findings. As can be seen in Figure 2, the neutral condition provided only weak support for the mere-exposure position, support that was limited to the highest level of exposure. Thus, the exposure effect is neither as easy to obtain nor as general as Zajonc's (1968) monograph suggests. Our

data support those of Suedfeld and Epstein (1970), Brickman and Redfield (1970), and Burgess and Sales (1970) in suggesting that other aspects of the total experimental situation can largely determine the nature and magnitude of the exposure effect.

REFERENCES

Barban, A. M. Black and white responses to "integrated" advertising. In H. H. Kassarjian (Chm.), The Negro and mass media: Social responsibility verus fear of "white backlash." Symposium presented at the Western Psychological Association meeting, Los Angeles, April, 1970.

Barban, A. M., & Cundiff, E. W. Negro and white response to advertising stimuli. Journal of Marketing Research, 1964, 1, 53-56.

Bernstein, H. Hollywood gives more work, roles to Negroes. Los Angeles Times, March 13, 1966.

Blume, F. R. The effect of negative and positive pictorial material on judgement of Negroes. Paper presented at American Psychological Association meeting, New York, September, 1966 (a).

Blume, F. R. The effects of Negro pictorial material on racial attitudes. (Doctoral dissertation, Claremont Graduate School.) Ann Arbor, Mich.: University Microfilms, 1966 (b). No. 67-9498.

Brickman, P., & Redfield, J. Drive and predisposition as factors in the attitudinal effects of mere exposure. In A. A. Harrison (Chm.), The effects of exposure versus novelty on the evaluation of stimulus objects. Symposium presented at the American Psychological Association meeting, Miami Beach, September, 1970.

Burgess, T. D. G., & Sales, S. M. Attitudinal effects of "mere-exposure:" A re-evaluation. Unpublished manuscript, Carnegie-Mellon University, 1970.

Carlson, W. Advertising: Negroes finding jobs--slowly. New York Times, March 20, 1966.

Cox, K. K. Changes in stereotyping of Negroes and whites in magazine advertisements. Public Opinion Quarterly, 1969, 33, 603-606.

Johnson, R. C., Thomson, C. W., & Frincke, G. Word values, word frequency and visual duration thresholds. Psychological Review, 1960, 67, 332-342.

Karlins, M., Coffman, T. L., & Walters, G. On the fading of social stereotypes: Studies in three generations of college students. Journal of Personality and Social Psychology, 1969, 13, 1-16.

Kassarjian, H. H. The Negro and American advertising, 1946-1965. Journal of Marketing Research, 1969, 6, 29-39.

Kassarjian, H. H. The Negro and American advertising: An historical analysis. In H. H. Kassarjian (Chm.), The Negro and mass media: Social responsibility versus fear of "white backlash." Symposium presented at the Western Psychological Association meeting, Los Angeles, April, 1970.

Klein, E. Stylistic components of response as related to attitude change. Journal of Personality, 1963, 31, 38-57.

Peterson, R., & Thurstone, L. Motion pictures and the social attitudes of children. New York: MacMillan, 1933.

Stafford, J. E., Birdwell, A. E., & vanTassel, C. E. Integrated advertising--white backlash? Journal of Advertising Research, 1970, 10, 15-20.

Suedfeld, P., & Epstein, Y. M. "Mere exposure" - plus set. In A. A. Harrison (Chm.), The effects of mere exposure versus novelty on the evaluation of stimulus objects. Symposium presented at the American Psychological Association meeting, Miami Beach, September, 1970.

Zajonc, R. B. Attitudinal effects of mere exposure. Journal of Personality and Social Psychology, 1968, 9, 1-27. (Monogr. Suppl. No. 2, Part 2.)

Zajonc, R. B. Brainwish: Familiarty breeds comfort. Psychology Today, 1970 3, 33-35, 60-64.

FOOTNOTES

[1]Revision of a paper presented in a symposium on The Effects of Repeated Exposure Versus Novelty on the Evaluation of Stimulus Objects (Albert A. Harrison, Chairman) at the American Psychological Association meeting in Miami Beach, September, 1970. This study was supported by U. S. Public Health Service Research Grant MH18273-01 and by research funds from Claremont Graduate School and Occidental College. The authors express their thanks for the assistance of Anthony Bishop, Harry Coffey, and the students in the first author's class in Experimental Social Psychology at Occidental College.

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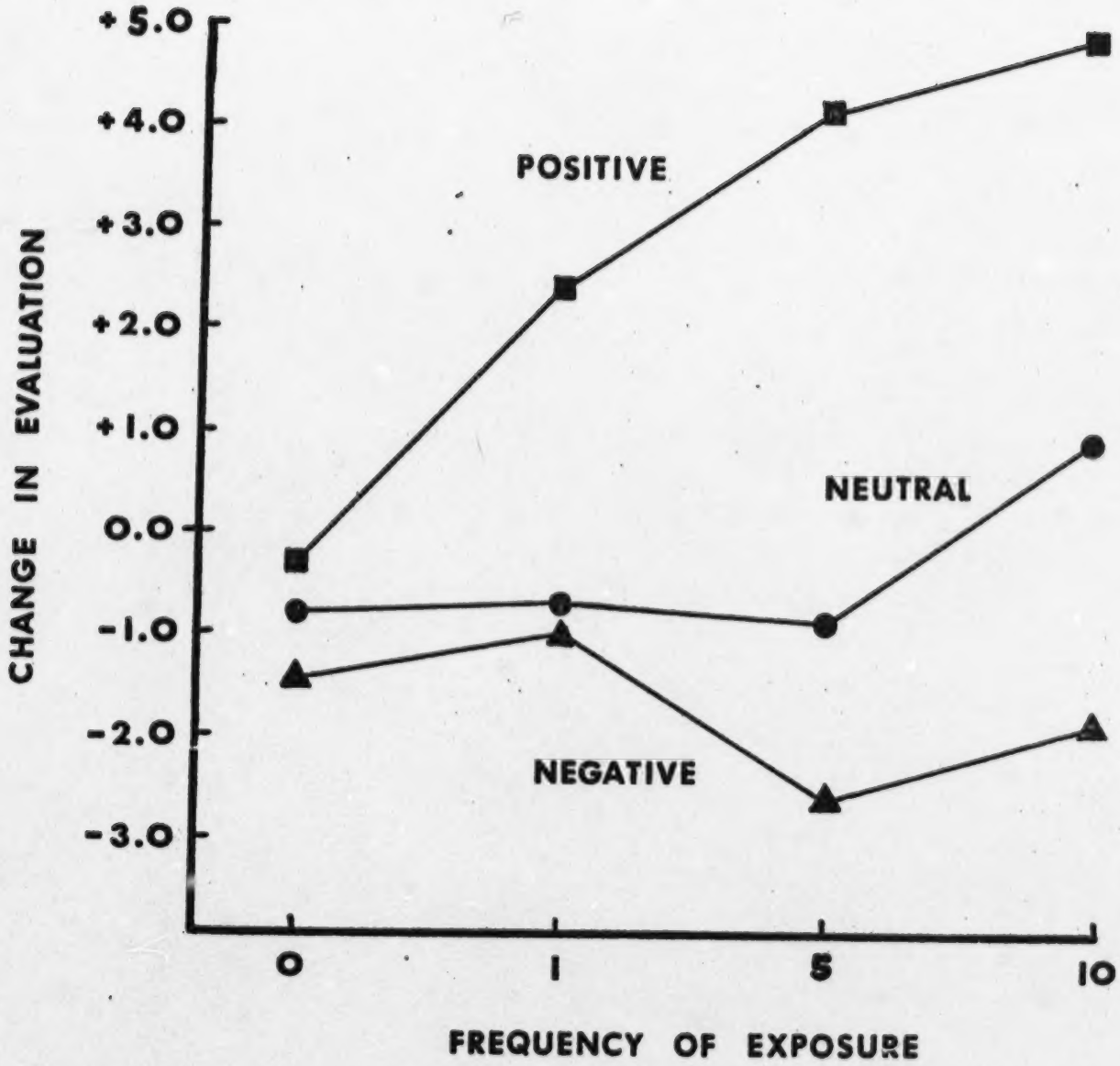
FIGURE CAPTIONS

Fig. 1. Typical positive (left), neutral (middle), and negative (right) pictures of black and white models.

Fig. 2. Mean change scores on the overall composite measure of evaluation of stimulus persons, as a function of frequency of exposure and picture content (positive, neutral, or negative). Positive scores indicate a positive shift in evaluations.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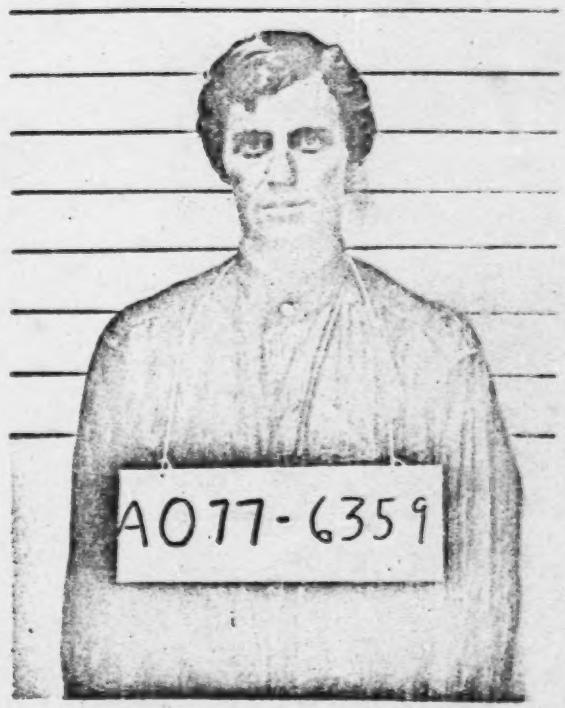
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